

CLAIM AMENDMENTS:

Please amend the claims as described below. In accordance with 37 CFR §1.121, a complete listing of all claims in the application is provided below. Notably, the status of each claim is indicated in the parenthetical expression adjacent to the claim number.

Claims 1 - 10 (**canceled**).

- 1 11. **(NEW)**: A system for managing the production of semiconductor devices, the
- 2 system comprising:
 - 3 a plurality of production devices to perform production processes for fabricating
 - 4 semiconductor devices;
 - 5 a plurality of in-line measuring devices to measure at least one process parameter of
 - 6 each production process performed by the production devices and to output the process
 - 7 parameter as measured data, wherein at least one in-line measuring device of the plurality
 - 8 of in-line measuring devices is associated with one of the plurality of production devices
 - 9 such that the in-line measuring device measures a process parameter of the process
 - 10 performed by the associated production device;
 - 11 a data storage device to store: (i) data which is indicative of the production
 - 12 processes performed by the production devices, (ii) the measured data, (iii) specifications
 - 13 of the production processes that are associated with the measured data, (iv) data of the
 - 14 start of production of the semiconductor devices, (v) data of the scheduled date on which
 - 15 each production process is performed by the production devices, (vi) data of the date of
 - 16 completion of each production process performed by the production devices, and (vii) data
 - 17 of the scheduled date of completion of the semiconductor devices; and

18 a computing device, coupled to the data storage device, the computing device
19 including:

20 an estimated yield operating unit to calculate an estimated yield of
21 semiconductor devices using the specifications of the production processes and the
22 measured data; and

23 a production managing unit to manage the production of the semiconductor
24 devices using the estimated yield of semiconductor devices.

1 12. (NEW): The system of claim 11 wherein a wafer lot includes a plurality of
2 semiconductor wafers, each semiconductor wafer contains a plurality of semiconductor
3 devices, and wherein the plurality of in-line measuring devices output process parameters
4 as measured for the wafers of a wafer lot.

1 13. (NEW): The system of claim 12 wherein the plurality of in-line measuring
2 devices output process parameters as measured for all of the wafers of the wafer lot.

1 14. (NEW): The system of claim 12 further including a user terminal, wherein the
2 user terminal provides: (i) the specifications of the production processes, (ii) data which is
3 indicative of a measuring position on a wafer to be measured by an in-line measuring
4 device, and (ii) data which is indicative of the type of the in-line measuring device.

1 15. (NEW): The system of claim 11 wherein the estimated yield operating unit
2 calculates an estimated yield of a wafer lot using: (i) statistical values of process

3 parameters, (ii) the specifications of the production processes, and (iii) the measured data
4 after the production process is performed by a predetermined production device.

1 16. (NEW): The system of claim 11 wherein the estimated yield operating unit
2 calculates an estimated yield for a production process performed by a production device
3 using: (i) the specification of the production process performed by the production device
4 and (ii) associated measured data, and wherein if the estimated yield of the production
5 process is lower than a predetermined minimum yield, the production managing unit
6 notifies an operator.

1 17. (NEW): The system of claim 16 wherein if the estimated yield of the production
2 process is lower than a predetermined yield, the production managing unit notifies an
3 operator.

1 18. (NEW): The system of claim 11 wherein at least one in-line measuring device
2 irradiates through-holes, formed in an insulating film on a wafer, with electron beam.

1 19. (NEW): The system of claim 18 wherein the at least one in-line measuring
2 device that irradiates through-holes formed in an insulating film on a wafer measures
3 electric current flowing through the irradiated through-holes on the wafer and outputs the
4 measured current as the measured data.

1 20. (NEW): The system of claim 11 wherein a semiconductor wafer contains a
2 plurality of semiconductor devices and wherein the estimated yield operation unit calculates
3 the estimated yield after each production process and calculates the number of acceptable
4 semiconductor devices of a wafer or inoperative semiconductor devices of a wafer on the
5 basis of the estimated yield.

1 21. (NEW): The system of claim 20 wherein the estimated yield operation unit
2 calculates estimated cost of a semiconductor device using: (a) the number of acceptable
3 semiconductor devices or inoperative semiconductor devices and (b) a working ratio of the
4 production device.